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June

1987

Volume 8, Number 3

Soil and Water Conservation News

United States Department of Agriculture
Soil Conservation Service



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Soil and Water Conservation News is the official magazine of the Soil Conservation Service. The Secretary of Agriculture has determined that publication of this periodical is necessary in the transaction of public business required by law of this Department. Use of funds for printing *Soil and Water Conservation News* has been approved by the Director of the Office of Management and Budget. *Soil and Water Conservation News* (ISSN-0199-9060) is published 12 times a year. Postage paid at Washington, D.C.

Magazine inquiries

Send inquiries to: The Editor, *Soil and Water Conservation News*, Public Information Division, Soil Conservation Service, U.S. Department of Agriculture, P.O. Box 2890, Washington, D.C. 20013-2890.

Subscriptions

Send subscription orders to: Superintendent of Documents U.S. Government Printing Office Washington, D.C. 20402

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*From the
SCS Chief*

Ground Water Protection—The Role of SCS

Nearly 95 percent of America's rural households rely on ground water. Keeping that water safe for domestic use is an issue that captures the attention of more farm and ranch families every day.

Last fall, Soil Conservation Service technical and program specialists from across the country met to examine what SCS is doing about ground water problems, and what we should be doing over the next 5 years. They discussed agriculture related ground water contamination from sediment, nutrients, animal waste, pesticides, and salts. Their recommendations for SCS included the following: Integrate ground water protection considerations into all SCS activities; evaluate onsite and off-site effects of conservation practices on ground water; establish a field-level training program on ground water; update policy, program, and technical documents; and develop a new comprehensive evaluation system to allow field personnel to better appraise agricultural and conservation impacts on ground and surface water.

Some of these tasks won't be easy given our immediate commitment to the Food Security Act of 1985. But, we must respond to the public call for action on obvious ground water problems. We need to continue responding to requests for help in developing ground water protection strategies, and we need to integrate ground water concerns into conservation and project planning. In this work, we must always be mindful that agricultural chemicals are important in the production process on cropland, rangeland, and pastureland.

Our future activities concerning ground water must be planned carefully. Presently, SCS is working with other U.S. Department of Agriculture agencies to develop a coordinated Departmental policy on ground water. We are also providing our technical staff with improved training and technical tools needed to meet the challenges ahead. Working together with landowners and conservation districts, we can help to protect our valuable ground water resources.



Cover: Lake Tahoe, Calif.,
(Photo by Ron Nichols,
photographer, SCS, Wash-
ington, D.C.)

Richard E. Lyng
Secretary of Agriculture

Wilson Scaling, Chief
Soil Conservation Service

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Better Farms, Cleaner Water

The best management practices (BMP's) for reducing soil erosion and improving water quality in Twin Falls County, Idaho, are living up to their name. With fewer than half of the BMP's implemented in a project to clean up polluted Rock Creek, sediment loading in the creek has already been reduced by 70 percent. And the creek is becoming a popular fishing area again with significant increases in game fish populations.

BMP's are being applied in the 45,000-acre watershed of Rock Creek as part of the Rural Clean Water Program (RCWP), a program begun in 1980 by the U.S. Department of Agriculture (USDA) and the Environmental Protection Agency to demonstrate the benefits of these practices.

Just 8 years ago, Rock Creek was identified as one of Idaho's most polluted streams by the Idaho Department of Health and Welfare's Division of Environment. Return flows of irrigation water from cropland carried tons of sediment, animal waste, fertilizers, herbicides, and organic nitrogen into Rock Creek, which enters the Snake River.

"We never realized just how much topsoil was leaving our fields until the water quality monitoring portion of the project began showing results," said Roy Jesser, local farmer and chairman of the Rock Creek RCWP Project board. "We knew we were contributing sediment to Rock Creek, but we usually felt the farmer on the other side of the fence was the culprit."

Jerry Nutting, another farmer in the watershed, said his neighbors on higher ground are giving him less of their topsoil since they started using BMP's. "It's to their benefit," he said, "and it has made it easier for me to keep my ditches maintained and improve the quality of water that drains from my farm into the creek."

The Rock Creek watershed extends across the boundaries of the Snake River and Twin Falls Soil Conservation Districts (SCD's). Jesser, who is a Snake River SCD supervisor, said the two districts decided to do something about the pollution and began intensive water quality planning activities in 1979, using funds available under Section 208 of the 1972 Clean Water Act. The districts identified the sources of pollution within the watershed and involved farmers in identifying the BMP's that would curb the problem. After a detailed plan was developed, they submitted it for funding under the new RCWP. The project was one of 13 selected nationwide.

Since then, Soil Conservation Service personnel have been working with farmers in the area to develop conservation plans that emphasize water quality. The plans contain agreed-to combinations of BMP's and timetables for implementation ranging from 3 to 10 years. The plans are finalized through contractual agreements approved by the landowners, SCD's, SCS, and USDA's Agricultural Stabilization and Conservation Service (ASCS), which administers the program. ASCS pays up to 75 percent of the cost of implementing the practices to improve sediment retention and agricultural waste management and up to 50 percent of the cost of the water conservation practices.

The project area is mostly furrow-irrigated farmland planted to such crops as dry beans, sugar beets, alfalfa hay, corn, and peas. When the project first started, the BMP's most frequently applied were those designed to improve irrigation systems and irrigation water management. Sediment retention practices, such as sediment basins, vegetative filter strips, and buried pipe runoff control systems, were also applied.

"You have to realize you have a problem before you can find solutions," said Jesser. "Until we had the sediment basins, we really didn't know how big a problem we had with sediment moving downslope."

To help keep the topsoil on the fields where it belongs, the local coordinating committee decided about 2 years ago to request cost sharing from ASCS for conser-

vation tillage. So far, about 40 farmers in the project have modified their contracts to include conservation tillage systems on more than 2,000 acres. The goal is to eventually have 10,000 acres under conservation tillage. USDA's Agricultural Research Service at the Snake River Conservation Research Center, located in Twin Falls County, is giving a high priority to conservation tillage research on irrigated land. So far, research has shown that crops can be produced with almost no tillage on furrow-irrigated land.

Another Rock Creek farmer, Bob Moore, said that since he started using conservation tillage hardly any soil has been deposited in the two sediment basins on his farm. Karl Joslin, Twin Falls SCD supervisor, is so pleased with the results of conservation tillage that he has sold his moldboard plow. "I just don't need it any more," he said.

The Rock Creek project is the only RCWP project selected for comprehensive water quality monitoring on furrow-irrigated land. Monitoring is done by the Division of Environment and coordinated by SCS. Results show that the subbasins within the watershed with the greatest percentage of BMP's implemented have the greatest reduction in suspended sediment and other agricultural pollutants.

An economic evaluation is being conducted by USDA's Economic Research Service with help from the University of Idaho. According to their latest report, conservation tillage is reducing sediment and production costs while providing long-term yield benefits.

When the planning phase of the project ended last fall, 185 individual plans had been developed for treating 21,000 acres. Of the 4,000 BMP's in the plans, about 1,900 have been implemented. The rest are scheduled for completion by 1995.

Michael J. Neubeiser,
RCWP project coordinator, SCS, Twin Falls, Idaho



Canoeists on Chesapeake Bay, St. Mary's County, Md.

Farmers Help Save the Chesapeake Bay

Chesapeake Bay, the Nation's largest estuary and most productive water body, boasts the largest blue crab harvest in the world and the largest oyster harvest in the United States. It is home to over 200 fish species and 2,700 plant species and is one of the world's largest recreational areas with over 7,000 miles of shoreline.

Chesapeake Bay is also one of the top three commercial shipping centers on the East Coast, accounting for over 90 million tons of cargo with a value of more than \$24 billion annually. The Bay watershed, home to 13 million people over a six-State area, is one of the most heavily populated drainage basins in the United States.

But, the health of the Chesapeake Bay has been failing for some time. Catches of fish and shellfish from the Bay have been steadily declining. In 1983, the U.S. Environmental Protection Agency (EPA) reported that the Bay was being overloaded with nutrients and other pollutants.



A water quality monitoring station along a stream in Lancaster County, Pa.

Special Projects Support Bay Cleanup

Ongoing and special cooperative programs are contributing to overall improvement of water quality in the Chesapeake Bay. Three of the Rural Clean Water Program projects administered by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Agriculture's Soil Conservation Service and Agricultural Stabilization and Conservation Service (ASCS) are in the Bay area.

SCS is working with local sponsoring groups on more than 20 small watershed projects that have been authorized for construction and nine others that are in the

Pollutants come from throughout the drainage basin, which stretches from New York to Virginia. One billion gallons of treated sewage effluent and nearly 20 tons of metal from waste treatment and industrial discharges enter the Bay daily. Runoff from farm, forest, urban, and developed land also contributes pollutants including nutrients and sediment.

The results of a 6-year, \$27 million EPA study of the Chesapeake Bay prompted the States of Maryland, Pennsylvania, Virginia, and the District of Columbia to legislate a program for sharing in cleaning up the Bay. Each of the three States and the District developed a strategy for tackling various pollution sources. Delaware, New York, and West Virginia support the cleanup effort, but are not members of the Chesapeake Executive Council.

Many Federal, State, and local agencies are participating in the Chesapeake Bay Program. The Soil Conservation Service, in addition to four other Federal agencies, signed memorandums of understanding in 1984 with EPA to establish joint cooperation. The other Federal partners are the Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Geological Survey, and the National Oceanic and Atmospheric Administration. In addition, the Department

of Defense signed a joint resolution to establish relations with EPA to manage land and water resources on their 61 military installations within the Bay area.

According to the EPA study, cropland contributes 27 percent of the total phosphorus and 60 percent of the total nitrogen delivered to the Bay under average rainfall conditions. Nutrients stimulate excessive algal blooms, which in turn lead to oxygen depletion. The area of the Bay with no dissolved oxygen at the bottom increased in size 15-fold from 1950 to 1980. Agriculture also contributes a large share of the sediment entering the Bay, which blocks sunlight needed by aquatic plants and animals and can smother them.

Because of their long history and expertise in dealing with erosion, sedimentation, and nutrient runoff, conservation districts are leaders in the agricultural initiatives. This has meant a key role for SCS, the technical arm of districts.

The agency has established a liaison position to coordinate its activities in the Chesapeake Bay Program and represent SCS on various committees. In addition, a resource conservationist is assisting EPA with the review, update, and use of the

Chesapeake Bay Computer Model. Both are headquartered at the Chesapeake Bay Liaison office in Annapolis, Md.

Congress initially appropriated \$250,000 and earmarked 10 positions for SCS for the Bay cleanup for Maryland, Pennsylvania, Virginia, and the District of Columbia. In 1986 and 1987, Congress authorized \$1.1 million and 31 positions for the Chesapeake Bay Program. Although each State has a different approach, the common goal is to accelerate the design and application of best management practices (BMP's) in priority, or targeted, watersheds. BMP's include grassed waterways, conservation tillage systems, stripcropping, critical area plantings, and animal waste management systems. Special emphasis is being given to nutrient management.

SCS worked with appropriate State agencies in developing criteria for identifying priority watersheds with the potential for serious sediment and nutrient pollution problems, and personnel have been reassigned to work in these areas. SCS and State agencies also worked together on identifying the appropriate BMP's for controlling sediment and nutrient runoff.

Along with other agencies, SCS helped the three States develop agricultural cost-share programs. Maryland has approved

planning stage. The agency is also providing technical assistance to the Piney Run Clean Lakes Program, funded by EPA and administered by the Baltimore County Soil Conservation District.

Huge increases in livestock populations throughout the Bay region are raising concern about animal waste management. In Lancaster County, Pa., for example, the number of animal units tripled from 200,000 in 1960 to 600,000 in 1980. Four million tons of manure are produced annually—over 11 tons for every acre of cropland in the county. This led to the Conestoga Headwaters Water Quality Monitoring Project, a cooperative effort among the U.S. Geological Survey, the Pennsylvania Department of Environmental Resources, EPA, SCS, and ASCS.

Monitoring equipment and wells were in-

stalled on two farms. The first was a badly eroded 50-acre dairy operation. For the first 2 years of monitoring, manure was applied at the rate of 42 tons per acre. The field was then terraced and manure and fertilizer applications controlled to determine the effect of these practices on surface and ground water quality.

The second site, also a 50-acre farm, was terraced and planted in continuous corn. All the manure from 200 beef cattle, 700 hogs, and 40,000 broilers was applied on this farm for the first 2 years. The farmer now applies only the nutrients needed, and excess manure is trucked to other farms. In addition to the two field stations, a small tributary is continuously monitored. Monitoring equipment is housed in a building and is connected to the stream by underground collection pipes. Preliminary results showed that the practices applied

significantly reduced sediment and nutrient loads from these farms.

Pennsylvania's mobile nutrient lab, a joint educational and demonstration project of several agencies, provides rapid, on-farm analyses of soils and animal waste. In addition to soil and manure analyses, a computer aboard the mobile lab recommends environmentally safe application rates of manure and chemical fertilizer. This allows farmers to make more efficient use of fertilizers and helps prevent nutrient pollution. Conservation districts in a six-county area are coordinating scheduling of the lab.

In Virginia, one SCS employee was assigned to the Division of Soil and Water Conservation under an intergovernmental personnel agreement. Another soil conservationist was hired under a cooperative

\$18 million to date for its cost-share program, Pennsylvania \$4.2 million, and Virginia \$6.0 million. In addition, Congress appropriated \$10 million to EPA in fiscal years 1985, 1986, and 1987. Of these funds, approximately \$7.2 million was granted each year to the three States and the District of Columbia. The States each received 30 percent and the District 10 percent with their respective governments providing matching funds. Amendments to the Clean Water Act authorize continuation of the Chesapeake Bay Program through 1990 and authorize \$10 million to be used for grants to the States and the District of Columbia.

These programs have dramatically increased the need for technical assistance in design and installation of BMP's. As a result, conservation districts have hired additional staff. SCS is training the new technicians and conservation planners involved in the cleanup.

Effective public information and education efforts are key to the success of any new program. SCS has worked closely with other State and Federal agencies in de-

veloping educational programs. In addition to working with print and broadcast media, agencies have developed a wide range of materials including fact sheets, brochures, bumper stickers, handbooks, and exhibits to inform both farm and nonfarm audiences. Field days and demonstrations have been effective in showing farmers and others the benefits of BMP's.

A teaching module on conservation planning was developed by SCS for use by vocational agriculture teachers in Maryland. The module is designed to introduce students to the concepts involved in conservation planning and the soil loss formula. SCS also helped produce the popular "Baybook," and provided funding for reprinting it to meet the demand for more copies from within the Chesapeake Bay drainage basin and around the country. This handbook gives tips on reducing erosion and runoff around the home as well as safe methods for handling toxic wastes, pesticides, and nutrients.

The Chesapeake Bay Program is a massive, long-term effort involving many different agencies, organizations, and individuals. While the role of SCS and conservation districts is important, it is just part of the total effort needed to restore the Bay to its condition of 30 or 40 years ago.

By improving farming activities, implementation of the conservation provisions of the 1985 Food Security Act—the Conservation Reserve Program (CRP), sodbuster, swampbuster, and conservation compliance—will help improve water quality in the Chesapeake Bay.

By the end of the fourth CRP signup, 36,000 acres in Maryland, Pennsylvania, and Virginia had been accepted into the program. Putting these acres into grasses and trees for at least 10 years will reduce soil loss in the three States by 938,000 tons and reduce total phosphorus entering the Bay by 1,700 tons and total nitrogen by more than 2,550 tons.

What SCS and conservation districts have proved throughout the years—that clean water starts with good land management—is coming true in the Chesapeake Bay.

Gerald R. Calhoun,
Chesapeake Bay Liaison, SCS, Annapolis, Md.

agreement with the Virginia Division to work in the field on best management practices (BMP's) in a demonstration watershed. SCS field staffs helped with rainfall simulator demonstrations at four locations. No-till plots were established next to conventionally plowed plots. A series of rainstorms were simulated using a modified irrigation system. Preliminary results indicate that the no-till corn plot had one-half the runoff, one-tenth the sediment and phosphorus loss, and one-fourth the nitrogen loss of the conventionally tilled plot.

SCS established criteria for innovative BMP's such as aerial seeding of winter legumes into standing soybeans; pasture management including an intensive rotation grazing system, cross fencing, and critical area treatment in a 10-acre dairy loafing area; and water control structures installed in drainage ditches to store water from sur-

face and subsurface drainage for irrigation.

In the District of Columbia, SCS conducted a survey of flooding and sedimentation on Pope Branch and Watts Branch, two Bay tributaries. The studies recommended stream maintenance and sediment removal to reduce flooding and improve water quality.

In Maryland, SCS is providing technical assistance to districts in meeting the State's goal of having a conservation plan developed on every farm in priority areas by 1989 and on every farm in the State by 1994. An SCS resource conservationist has been assigned to provide the Maryland Department of Agriculture guidance in administering its \$18 million agricultural cost-share program.

SCS also developed a conservation plan for a 400-acre cash grain farm in Queen Anne's County in cooperation with the University of Maryland Experiment Station. The purpose of the project is to determine costs of installing selected BMP's on a working farm and determine their effect on water quality.

Locally, SCS conservationists are helping districts and community groups solve critical erosion problems. Community complaints about sedimentation of the once scenic Sassafras River in Kent County, Md., for example, uncovered over 180 huge woodland gullies that were spewing thousands of tons of soil into the river and eventually into the Bay. The district obtained funding from the Coastal Zone Management program to hire a soil conservationist to work with landowners in the Sassafras watershed.



Kent County, Md., farm at the edge of the Chesapeake Bay.

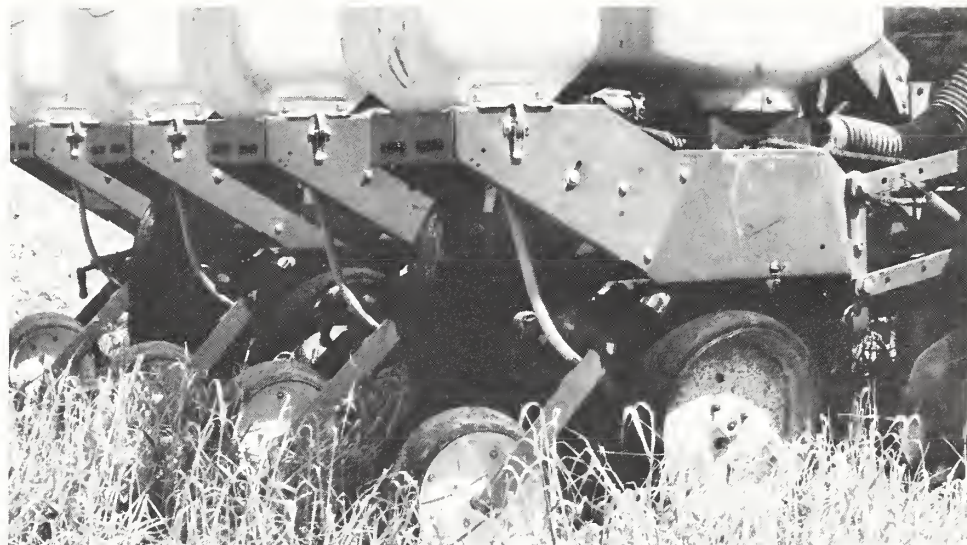


Many small streams contribute to the Chesapeake Bay.

The State targeted special cost-share funds to the area and many of the gullies were healed. In the process, special practices such as rock check dams or "gully plugs" were developed. Practices promoted there such as rock-lined waterways and drop structures are now being used extensively throughout the State.

Through Resource Conservation and Development councils, critical area stabilization projects along roadsides and shorelines are helping to reduce sedimentation.

Gerald R. Calhoun,
Chesapeake Bay Liaison, SCS, Annapolis, Md



Farmers in the Chesapeake Bay watershed use conservation tillage and other practices to reduce sediment reaching waterways.



District of Columbia Joins Bay Cleanup

In recent years, the well-being of the Chesapeake Bay ecosystem has been declining because of the activities of the growing population in the drainage basin. In 1976, concern for this national resource prompted Congress to order the U.S. Environmental Protection Agency (EPA) to conduct an intensive study of the environmental quality and management of the Chesapeake Bay.

The study of the Bay led researchers upstream through polluted rivers, silt-filled streams, and neglected creeks. Contributing heavy sediment loads to the Potomac River, which flows directly into the Bay, was the Anacostia River, originally known as the Eastern Branch of the Potomac River. The Anacostia flows from Maryland through the District of Columbia and into the Potomac.

With technical assistance from the Soil Conservation Service, the District of Columbia Soil and Water Conservation District (SWCD) is working on repairing damaged

streambanks along the Anacostia River and its tributaries to reduce the amount of sediment and other pollutants discharged into the stream system.

The SWCD has enlisted the help of the District Department of Consumer and Regulatory Affairs, the District Department of Public Works, the Department of Recreation, and the District Office of Planning.

Streambank stabilization and improvement is planned to begin this year along Watts Branch, which flows through northeast Washington, D.C., and is the largest tributary of the Anacostia River. Work at one site along the stream with steep banks will include repairing a section of retaining wall and installing 180 feet of new retaining wall.

At another site, streambanks will be shaped, a system of erosion control grids installed, topsoil applied, and hydroseeding done. District of Columbia SWCD Manager Paula Jones said that the hydroseeding mixture will include seeds of wildflowers native to the District of Columbia. According to Jones, most wildflowers have disappeared from the District because of the effects of urbanization, and this will be an effort to reestablish native species.

Streambanks will be stabilized with riprap along another section of Watts Branch and

two storm sewer outlets will be repaired. All along Watts Branch, trees will be selectively thinned to improve existing stands and the debris from dead or dying trees removed to improve streamflow and protect streambanks from erosion. Silt and sediment deposits will be removed at specific sites to realign the stream, and tough nylon matting that allows water to soak into the soil and protects vegetation as it grows up through the filaments will be used to stabilize streambanks. A water-permeable polyester fabric developed for reducing erosion and sedimentation will be installed under riprap.

Watts Branch runs through an area that is mostly residential with some park land, commercial development, and schools. Through the Thomas L. Ayers Outdoor Classroom Education Program, the SWCD and other cooperators are planning to involve nearby schools in monitoring water quality, establishing vegetation in eroded areas, and other conservation activities.

The District of Columbia has appropriated \$437,000 to carry out the planned work along Watts Branch and other streams. The other tributary of the Anacostia River planned to receive treatment is



At left, Watts Branch, a tributary to the Anacostia River, which flows into the Potomac River and the Chesapeake Bay, is clogged with sediment and debris. At right, Soil Conservation Service District Conservationist Ernest Moody looks over damaged streambanks of Watts Branch, scheduled for restoration.



Hickey Run, which flows through the U.S. Department of Agriculture's National Arboretum.

The 77 water quality monitoring stations set up by the water hygiene section of the District's Department of Consumer and Regulatory Affairs along the Potomac and Anacostia Rivers and their tributaries will provide information on the effectiveness of conservation practices in the watershed. The hygiene section monitors the amount of heavy metals, fecal coliform bacteria, nitrogen, phosphorus, and total suspended solids in the water as well as physical characteristics such as pH, dissolved oxygen, and temperature.

To encourage people living and working along Watts Branch and throughout the District of Columbia to help protect the streams and all of the area's natural resources, the SWCD and the University of the District of Columbia's Cooperative Extension Service cooperated on publishing "The Homeowners' Urban Guide on Ground Maintenance in Washington, D.C." The Soil Conservation Service provided technical assistance on the publication, and a local landscape architectural planning firm also helped.

The guide includes information on soil erosion, water conservation, land use plan-

ning, and lawn care as well as the trees, shrubs, and grasses suited to the area and planting guidelines. The guide also contains a bibliography and a list of agencies and organizations and their telephone numbers to contact for more information. The guide is in looseleaf form so that additions can be made and it can be easily updated.

Funding for the urban guide came from a grant from the District of Columbia Department of Housing and Community Development. The guide was published as part of the District's Chesapeake Bay initiatives and will be used in efforts to increase public awareness of how the condition of natural resources in the District affects water quality in the Chesapeake Bay.

Ernest L. Moody,
district conservationist, SCS, Washington, D.C.

Katharine N. Mergen,
retired education and relations specialist, SCS, Washington, D.C.

Soil Survey Will Benefit Bay

The soil survey of Baltimore, Md., is scheduled for completion by June 1989. The survey, begun in 1986 by the Soil Conservation Service, will compile soil data on 51,000 acres that drain into the Chesapeake Bay.

City officials requested the survey to help planners meet new State requirements for storm water management as well as highway construction and landscape design. According to SCS State Conservationist Pearlie Reed, the information in the survey will help the city do more efficient and cost-effective planning and reduce pollutants reaching the Chesapeake Bay.

SCS conducts soil surveys to map and describe the characteristics of the different soils in an area. Reed said the Baltimore survey will feature 14 tables that interpret the characteristics of each soil series.

Katherine C. Gugulis,
head, Media Services, SCS, Washington, D.C.



Manure Goes from Waste Problem to Resource

In southeastern Pennsylvania, which has had a fourfold increase in livestock and poultry numbers in the last 20 years, high technology is changing manure from a waste problem into a valuable resource.

Excess manure combined with fertilizer applications has caused surface and ground water quality to deteriorate in this area of the Susquehanna River Basin, which drains into the Chesapeake Bay.

To reduce nonpoint pollution in the area, the U.S. Environmental Protection Agency (EPA) is providing grant money to be matched by the State. In 1985-86, EPA and the State each provided \$2 million. About half of the funds were used in a cost-sharing program to help farmers properly manage soil and nutrients. Along with technical assistance from the Soil Conservation Service, farmers received cost sharing on the installation of grassed waterways, diversions, terraces, manure storage facilities, streambank stabilization measures, and other conservation practices. The rest of the funds were used for research, education, and special projects to further pollution reduction efforts.

Some of the special projects are providing high-tech solutions to the area's water pollution problems. The Lebanon County Conservation District, for example, developed a special truck-mounted manure spreader that uses a hydro-push spreader capable of handling any type of solid manure. A radar sensor coordinates ground speed with the spreading rate. The result is even spreading regardless of truck speed or field surface.

In developing the manure spreader, the district worked with the Evergreen Tractor Company of Lebanon, which donated engineering assistance, and the Osterlund Truck Service of Harrisburg, which helped locate the right kind of truck to carry the spreader.

"This unit makes it possible to move the manure easily from a farm that has too

much manure to one that needs it to fertilize the soil," said Conservation District Manager Doug Goodlander. "We help farmers with manure to sell get together with farmers who want to buy it."

Use of the spreader is free, but to use it farmers must first have the soil, water, and manure tested to determine the actual amount of manure needed on a field.

"We want good soil conservation practices on the involved fields," said Randy McCormack, SCS soil conservationist.

"Using a more efficient spreader to apply the amount of manure needed to properly fertilize the soil is of little value if the manure washes into a stream."

Another high technology approach to nutrient management is a mobile nutrient lab developed by the Pennsylvania State Department of Environmental Resources (DER) and the Cooperative Extension Service at Penn State University. Nutrient management specialists from the DER's Bureau of Soil and Water Conservation drive the mobile lab, a converted recreational vehicle, to farms and rural communities and do soil, water, and manure tests. An on-board computer develops nutrient management programs based on test results. Turn-around time for the tests is 24 hours as opposed to the 10 days it takes to send samples to a university.

The manure is tested for nitrogen, phosphorus, and potassium to determine its value as fertilizer, and the soil is tested for nitrogen, phosphorus, potassium, and potash to determine its need for added nutrients. Water is tested for signs of excess nutrients.

"The lab is available to all farmers within the Susquehanna River Basin through county conservation districts," said Russ Wagner of the Bureau of Soil and Water Conservation.

"Not only is this manure management effort improving water quality," said Goodlander, "but it's also saving farmers money on fertilizer bills." Broiler manure, high in nitrogen, can be bought for \$14 per ton. The same nutrients in a ton of fertilizer would cost \$27. At a manure application rate of 8 tons per acre, that is a saving of \$104 per acre. "Many farmers are finding that they need little or no additional commercial fertilizer," said Goodlander.

"Everyone's benefiting from this cooperative effort," said McCormack. "Federal, State, and local governments are joining together to protect the environment so vital to us all."

Frederick E. Bubbs,
public affairs specialist, SCS, Harrisburg, Pa.



This manure spreader is helping farmers in Lebanon County, Pa., to better manage the nutrients they apply to their fields.

News Briefs

Farmers Put 10 Million More Acres Into CRP



Don Baloun, SCS district conservationist, at left, receives CRP bid on cropland acres from a Marshall County, Iowa, farmer.

In the February signup, the U.S. Department of Agriculture (USDA) accepted 10.6 million more acres of highly erodible cropland into the Conservation Reserve Program (CRP), according to Secretary of Agriculture Richard E. Lyng. In this latest signup, farmers on 101,020 farms submitted bids on a total of 11.3 million acres. The accepted bids for annual rental payments ranged up to \$90 per acre with an average of \$51.17 per acre.

Land entered into the Conservation Reserve, as directed by the Food Security Act of 1985, will be ineligible for farming for 10 years and must be planted with permanent vegetative cover.

Participants will receive cost-share payments of up to 50 percent of eligible costs to establish trees and grass on the acreage placed in the Reserve. These payments will partially reimburse farmers for the one-time costs of establishing required conservation practices on the cropland.

Producers designated 1.9 million acres of corn base acreage to take advantage of a corn "bonus" rental payment that was offered to entice highly erodible land in the Corn Belt into the Conservation Reserve. The bonus, to be paid in generic commodity certificates, amounts to \$2 a bushel, based on USDA's Agricultural Stabilization and Conservation Service program payment yield for corn, for each acre of corn base accepted into the CRP.

To date, farmland signed up totals 19.5 million acres. During the first three signups, USDA accepted bids to enter 8.9 million acres on 69,099 farms into the program. Bids on the previous signups ranged up to \$90 per acre with an average of \$45.52 per acre.

Secretary Lyng said the next signup period will be July 20 through July 31.

CTIC Takes New Name and Expands Mission

Water quality in agricultural production and nonpoint source pollution are subjects that farmers and the general public want to know more about. To reflect the growing interest in the relationships between cropland conservation and water quantity and quality, the Conservation Tillage Information Center has changed its name and adopted an expanded mission.

The Center, now named the Conservation Technology Information Center, based in Ft. Wayne, Ind., serves as a clearinghouse for information on conservation tillage as well as other cropland conservation subjects.

"One objective of the name change and expanded mission is to include information on the effects of agricultural production on surface and ground water," said Jim Lake, the director of the Center. "We have been getting more and more inquiries about soil conservation and water quality that go beyond conservation tillage. Also, the water aspects of conservation tillage are a grow-

ing element of many conservation tillage studies, so this is a natural expansion of our services."

Lake said that the Center wants to help conserve the resource base and improve water quality, while protecting the economic viability of agriculture.

The center originated in 1983 as a non-profit special project of the National Association of Conservation Districts, serving as a clearinghouse for information on conservation tillage. It operates as a cooperative venture among agribusiness, government agencies, private foundations, other non-profit groups, and farmers.

It has designed such varied products and services as an annual nationwide survey of conservation tillage practices, a computerized abstract library, computerized networks of growers and resource specialists, various directories and reference guides, a monthly newsletter, and a national radio program.

Be A Guide, Take a Ride

If you're traveling north on U.S. Highway 93 toward Kingman, Ariz., you can take a nature tour without waiting for a tour guide or leaving your car.

The Wickenburg Natural Resource Conservation District (NRCD), with the help of the Soil Conservation Service and Trails of the West, Inc., has published a pamphlet that describes a self-guided tour of the Wickenburg-Congress-Aguila area in central Arizona.

The pamphlet, using highway mileposts as reference points, describes the area's vegetation, soils, and resources, according to SCS District Conservationist Smith Covey in Phoenix.

"The tour takes about 2 hours and offers an opportunity for people to see how land can be used to produce food and fiber while protecting the natural resources of the State," said Larry Hancock, chairman of the Wickenburg NRCD.

Copies of the pamphlet are available through the Wickenburg NRCD, P.O. Box 244, Wenden, Ariz. 85357.

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Send present mailing label and
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Meetings

July	12-16	Association of Official Seed Certifying Agencies, Nashville, Tenn.
	16-18	Izaak Walton League of America, St. Paul, Minn.
August	1-5	National Farm & Power Equipment Dealers Association, Milwaukee, Wis.
	2-5	Soil Conservation Society of America, Billings, Mont.
	9-13	Association of State and Interstate Water Pollution Control Administrators, Hartford, Conn.
	9-13	National Association of County Agricultural Agents, Charlotte, N.C.
	24-27	International Symposium on Design on Hydraulic Structures, Fort Collins, Colo.
September	12-15	International Association of Fish & Wildlife Agencies, Winston-Salem, N.C.
	13-15	World Fertilizer Conference, New York, N.Y.
	23-25	National Waterways Conference, Little Rock, Ark.
October	3-6	Farm and Industrial Equipment Institute, Palm Desert, Calif.
	4-8	Water Pollution Control Federation, Philadelphia, Pa.
	13-16	Natural Areas Conference, Peoria, Ill.
	14-18	National Association of Biology Teachers, Cincinnati, Ohio
	16-21	North American Association for Environmental Education, Quebec City, Quebec, Canada
	18-21	Society of American Foresters, Minneapolis, Minn.
	25-28	International Irrigation Exposition & Technical Conference, Orlando, Fla.
	26-29	Geological Society of America, Phoenix, Ariz.
	28-29	American Forestry Association, Jackson, Miss.
	31-Nov. 3	American Society of Landscape Architects, Baltimore, Md.
November	4-6	North American Lake Management Society, Orlando, Fla.
	8-10	American Society of Farm Managers and Rural Appraisers, San Antonio, Tex.
	8-10	National Association of State Universities and Land-Grant Colleges, Washington, D.C.
	8-11	National Forest Products Association, San Francisco, Calif.
	9-16	National Grange Convention, Syracuse, N.Y.
	15-20	American Institute of Chemical Engineers, New York, N.Y.
	29-Dec. 4	American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, Atlanta, Ga.
December	5-8	American Association of State Highway and Transportation Officials, San Diego, Calif.
	6-9	Western Forestry Conference, Portland, Oreg.
	7-11	American Geophysical Union, San Francisco, Calif.
	9-12	Keep America Beautiful, Washington, D.C.